Technology Department

Catawba County Government Technology Strategic Plan

Submitted by
IT Governance Committee
June 2007

It's a great time to be an **innovator.**

For online plan and other information visit: http://www.catawbacountync.gov/depts/itc/itd.asp

We are surrounded today by
possibilities and inspiration

What if every citizen could get the information
they need
when they need it
and conduct business
 when they want to?

What if data flowed freely
from department to department
and services from those departments
were coordinated to provide for the public?

What if your car could call for help
and relay location
and medical information
directly to responders
and to the hospital?

What if applications talked
 to each other so that real
time decisions could be made?

There are so many new
possibilities at our disposal
It's up to us to be inspired
and make them happen

Table of Contents

Executive Summary

Both internal and external environments of Catawba County are changing, and technology is a critical supporter of the development, implementation and enhancement of County services. This makes it imperative that there is an overall approach for the selection, use, and support of technology that aligns with County resources, business needs, and processes.

Catawba County's Strategic Technology Plan provides direction for addressing both short-term needs and long-term requirements for cost-effective, practical technological solutions. Through the investment in and use of advanced technology, the County can place a strong emphasis on both external and internal customer services.

As is the case with all strategic plans, this plan is a "living document" which allows for changes over time and serves as a broad guideline for action. The nature of technological advances and changing County needs will mandate plan revisions. The plan is designed to link the County's needs and goals with information technology to provide improved government functions and enhanced customer service.

Catawba County's Strategic Information Technology Plan provides a framework for the effective management of Information Technology (IT). The primary goal of IT is to support the business objectives of the County and to facilitate departmental efforts to provide efficient and effective services to the citizens, businesses, and visitors of Catawba County. The plan also provides a foundation for an enterprise-wide approach to the management of information technology. Catawba County is a leader among local governments as it has moved from a silo approach (department-specific) to a process-oriented environment (cross-cutting services focused on the clients of government) with some of its recent projects.

Many future technology efforts will cross multiple departments with a single goal of providing services to the public, businesses, and visitors of Catawba County. This environment requires technology to be used as the basis for communication, interoperability, data and resource sharing. Furthermore, technology is a vehicle through which cost reduction can occur by increasing efficiency and effectiveness of services through the use of an enterprise architecture and standards.

This plan is not intended to limit department autonomy but rather to provide a comprehensive roadmap focused on solving common problems and enabling collaboration. The plan is built on the IT management model which utilizes the best features of both centralized and decentralized IT management, support and decision making. The plan also requires the development of the IT architecture and standards which are critical for true economies of scale to be reached and for interoperability to occur.

The development of the strategic plan involved many steps including reviews of studies and assessments of the technology department, reviews of other strategic plans, and reviews of current trends in local government and technology. The plan was developed through a participatory committee process, allowing input from all areas on County Government.

Current Trends

During the process the committee reviewed major trends in local government. Most are geared toward providing cost-effective, quality services to the public. Catawba County has long been a leader in these areas and studying the trends only helps enhance what is presently being done. Current trends in local government include: benchmarking and performance measurement; customer service and providing a high-quality product for citizens, businesses, visitors and employees; economic development and its critical connection to data infrastructure; outsourcing and the ability to extend current staffing resources; responsive government based on new technologies and new ways of conducting business; and finally, the use of technology by forward-thinking governments to continually enhance service delivery and foster a "work smarter not harder" approach.

Besides local government trends, current trends in technology were also considered in this plan. Again, Catawba County with its significant investment in technology is a leader. Current trends in technology include: a transition to a digitally converged world in which almost all aspects of telephony, television, video, audio, and other communication technologies are converging into a single digital platform; an increasing need to support legacy systems while new systems are being implemented; an increased importance on computer and telecommunications security; management and investment in information technology to support business functions; the constant growth and expansion of a mobile workforce; and resource consolidation in the form of servers, virtual technologies and SAN storage.

Information and Technology Governance Committee

The Information and Technology Governance Committee was formed early in the planning process to provide input and direction for developing a strategic plan for technology. The committee consists of representatives from each department that is either the department head or his/her designee. The purpose of the committee is twofold:

- To recommend policy direction on a countywide basis for all information technology, including voice and data communications. The committee will review information and office automation needs and recommend to the County Manager direction and priorities consistent with the long-term mission, goals and objectives that have been established for the County.
- To obtain broad organizational support for information systems efforts.

In efforts to determine the technology needs of Catawba County Government and stay abreast of new technologies, the IT Governance Committee receives input from a number of other groups, committees and sources. These include: the Board of Commissioners, County Management, citizens, departments and numerous committees, as well as, researching mandates, critical issues and new technologies.

Technology Direction

The Strategic Plan sets forth the technological direction for Catawba County. It provides the vision, mission, objectives, and principles that guide each decision. Technology supports the business needs of the organization and through this document processes are defined to better understand and support those business needs.

The vision of Catawba County Government is to embrace technology to improve service and efficiency, and provide seamless access for the public. This will be accomplished in a spirit of customer service, partnership, and consultation with our stakeholders. Our guiding principles are quality, creativity, innovation, integration, and cost effectiveness.

The mission of the Technology Department is to provide leadership and guidance in all aspects of technology to enhance government services.

In order to accomplish this mission, Catawba County has enumerated eleven objectives to guide IT activities and maximize their benefits.

Empower   Place information, tools and resources in the hands of citizens and staff that allows them to make informed decisions.

Consolidate Eliminate duplication and improve the utilization of existing IT resources.

Create   Deploy innovative, value-added technology solutions to meet County core missions.

Expand   Increase the number and quality of online services available to citizens, local government, businesses, educators, and other constituency groups.

Verify   Ensure maximum availability of systems and maximum results from County projects.

Add Value   Increase the value of electronic data and information.

Integrate   Solve common business problems through shared applications.

Collaborate   Encourage business and technology architectures that drive improved planning and coordination.

Improve   Incorporate technology best practices into County processes and procedures.

Protect   Protect the lives and safety of citizens, and safeguard their privacy by maintaining confidentiality and security of electronic documents and by providing technology that enhances their personal safety and security.

Save   Maximize buying power on commodity technologies and services by leveraging economies of scale to reduce expenditures.

In addition to the above, the IT Governance Committee has adopted a set of principles to aid in making decisions. Catawba County's Technology principles represent an integral part of the overall framework of the vision, strategy, mission, and values that guide the selection, deployment, and utilization of information technologies. These principles form the philosophy that informs and shapes technology decision making and provides criteria that governs the actions of decision makers and employees in performing their work. While not included here, the principles can be found in the plan.

Changing Roles of Technology

Not only do the vision, mission and principles mark a significant departure from the traditional governmental approach, the role of IT is changing. In the past, IT was that group of individuals that kept the technology running. They installed machines and wrote programs. While IT still provides those services, they are now expected to learn business processes and help design new and better ways to use technology. They are faced with the complexity of today's IT technology environment, where linking and integrating disparate technologies have largely replaced deep focus on any one technology. IT personnel are interacting with other IT staff, business constituents, and management in ways they have never needed to in the past. These new roles require

staff members with strong verbal and written communication skills, analytical talent and process skills, and business smarts.

As Catawba County Government moves into the future, IT must become more involved with the departments in a different way and be able to analyze the business process and flow and then to make recommendations. The IT department must be able to understand all the systems, how they interact and promote the value to the enterprise as opposed to a departmental approach.

Technology Department Organizational Structure

The Technology Department currently has 52 total staff positions, 21 in the IT Division, 5 in the GIS division and 26 in the E-911 Center. The total operating budget for 2006-07 is $ 3,749,306 million, which includes $ 2,593,040 million in the IT and GIS Divisions and $1,256,266 million for E-911. The E-911 Division operates three shifts around the clock for emergency communication services.

The Technology Department structure consists of four distinct divisions and three overlapping divisions. The four distinct divisions are: Application Systems Development, Operations, Geospatial Information Services, and E911 Communications. The three overlapping divisions are: Administrative, Database Management, and Customer Support.

The Administrative Team is made up of the Chief Information Officer and the leaders of the Application Systems Development Team, Operations Team, GIS Team, and E911 Communications Team. This team provides the leadership and guidance for all the other teams.

Since the services and personnel of the Database Management Team and the Customer Support Team cross both the Application Systems Development Team and the Operations Team, they are subdivisions of the major divisions.

Recently Completed Studies

The Catawba County Technology Department has recently completed or been the subject of a number of studies concerning the state of technology in the County. These studies provide vital information into the strengths, weaknesses, and opportunities that exist. Specifically the plans reviewed and that contributed to this plan were: The Strategic Opportunity Assessment Report (SOAR),February 12, 2005; The Catawba County Technology Disaster Recovery Plan, July 2006; The Catawba County Web Page Design Plan, July 2006; The Catawba County Technology Staff Evaluation Report,September 2006; SWOT(Strengths, Weaknesses, Opportunities, Threats), March 2007.

Some points revealed in these studies include:

- Refocus the Catawba County Internet site from an inward "all about the county government" to an outward "all about Greater Hickory" web presence.
- Focus on partnerships between Catawba County, the municipalities, and the school systems.
- Leverage technology to facilitate the transition of County leaders in the areas of strategic planning, business planning and performance management.
- Consider the addition of a project manager/ consultant position.
- Consider establishing a fulltime security position.
- Leverage investment with providers to contribute to the creation of a community network.
- Investigate partnerships/ contractual relationships with application service providers.
- Increase investments and collaboration in community facing, community building applications.
- Collaborate with other government entities to bring networks and infrastructures together into a shared, more efficient structure.
- Implement a disaster recovery plan that provides for a duplicate-mirror site using virtual technology.
- Consolidate servers using virtual server technology to decrease rising support cost and to provide a more stable, redundant environment.
- The infrastructure provides for a 100MB LAN speed that could be increased to Gigabit speeds. It is recommended that future planning for infrastructure consider.
- It is recommended that the Password Policy be updated to industry standards and put into practice.
- Force storage on the servers so the data would be backed up and provide training for end users to ensure proper storage of data on the servers.
- Continue to improve security functions on all platforms. Strictly enforce policies and procedures when violations are detected. Regularly let users know the importance of keeping their passwords secret. Let users know how to choose strong passwords that are very difficult to guess.
- Use a common website design template for the website that clearly states the disclaimer and the security notice.
- Provide a common tool for website development.
- Add features to the website such as enewsletters, subscriptions, RSS feeds, and podcasts.
- Add multiple languages option to the site.
- Strengthen the project management skills of the staff.
- Implement technology best practices and information life-cycle management processes.
- Create an environment in which creativity and innovation is embraced.
- Increase the level of training for the technology staff.
- Work to reduce staff load by consolidating applications where possible and by using better management techniques.

- View workload and staff decreases on an enterprise basis, not just on a department by department basis.
- A base level of architecture and standards coupled with recent investments in VoIP and SAN technology provides a good foundation for future projects.
- There is a strong commitment from Administration for technology plus high quality people on staff.
- A high-quality World Wide Web presence for citizens, visitors, and employees with extensive Geospatial Information Services (GIS)
- There is a need for a business analyst
- There is a lack of a mature governance structure and a project justification process.
- There are many opportunities to consolidate servers, applications, and services, as well as, build on existing investments.
- NG911 and interoperability could increase Public Safety service levels.
- Security is a never ending concern at all levels.

Setting Strategic Initiatives

A planning session was conducted with the IT Governance Committee on March 15, 2007. During this session, the committee referenced the work on the prior meetings and looked at several questions. First they looked at successful County projects and why they were successful. Then they looked at problems along with citizen related issues that the County currently is, or will face. Finally they looked at areas that should be addressed in a long range strategic plan. This session was followed up by sending the same questions and notes from the meeting to department heads for their input.

Below are some of the areas that should be addressed in the plan:

- Expand web and online development by marketing services efficiently, by providing better translation tools, by providing a uniform method for online payments, and by expanding the delivery of online services,
- Encourage enterprise solutions while providing for unique business needs per department. Build efficient internal processes to optimize operational procedures while maximizing data/information sharing and minimizing redundant data entry. Eliminate duplication of effort.
- Partner with providers, municipalities to improve services to the public. Encourage a wireless community infrastructure. Ensure secure, accurate, timely data information. Increase support for a mobilized community. Utilize technology to improve public information efforts
- Build upon the technology that we have and utilize best practices. Incorporate GIS more as technology changes. Use standard development tools and web applications. Build a common data warehouse.

By putting in place a long strategic term plan that supports the goals of the County Commissioners and aligns with the anticipated needs of the citizens, technology can

play a pivotal role.   Building the infrastructure and putting best practices forward now will prepare Catawba County Government for this eventuality.

Strategic Initiatives

Strategic Initiative 1

Empower the Public: Enable the public to interact with local government by providing secure access to information and the ability to efficiently conduct appropriate business 365/24/7.

1.1 *Create web based systems that provides secure, accurate and timely information to the public* I

1.2 *Initiate an enterprise wide solution to online payments*

1.3 *Provide multiple, media rich methods to the public for accessing and receiving information*

1.4 *Provide web enabled applications for the public to use*

Strategic Initiative 2

Improve outcomes, efficiency, responsiveness, and agility of services by transforming the management of information technology through best practices and shared resources.

2.1 *Implement Enterprise Architecture across the County*

2.1a *Maximize the County's investment in Peoplesoft by using it as the preferred development and delivery platform*

2.1b *Maximize the County's investment in VoIP by ensuring that future systems integrate with the system*

2.1c *Maximize the County's investment in virtual technology*

2.1d *Institute Life Cycle Management(LCM) methodology across the County*

2.1e *Continue to apply application, equipment and replacement standards across the County*

2.1f Capture once, use many

2.2 Formalize an IT Governance Structure.

2.3 Use Project Management Methodology on all projects to maximize the success rate

Strategic Initiative 3

Transform key business processes through the effective use of innovative technology and state-of-the-art software.

3.1 Enable an increasing mobile workforce

3.2 Continue to invest in SAN /Disaster Recovery technology to meet growing storage needs

3.3 Implement Web Enabled Applications where feasible

3.4 Build a seamless interface for public safety across the County and municipalities:

3.5 Leverage advanced GIS technology to enhance existing systems and integrate geospatial capabilities as a fundamental component of business systems where appropriate

Strategic Initiative 4

Leverage innovative partnerships to offer better services

4.1 Encourage technology initiatives that provide better services and opportunities for the public.

4.1a Encourage broadband services to all homes
4.1b Partner with local service groups to recycle computers and other technologies

4.2 Partner with the school systems, municipalities and other agencies to offer services that are common to all.

Strategic Initiative 5

Empower the Workforces: Enable personnel by increasing the efficiency and agility of the systems they depend on.

5.1 Provide training opportunities for end users that go beyond the basics and empower users to be self sufficient

5.2 Ensure a well trained Technology staff

5.3 Transition the Mobile Workforce

5.4 Expand online employee services and recruitment

Strategic Initiative 6

Improve public safety by leveraging modern information systems and technology.

6.1 Make security and confidentiality overriding priorities in all systems

6.2 Build a reliable communication network that provides for interoperability across the County

6.3 Provide multiple options for the public to secure services

6.4 Build in redundancy to the network infrastructure

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Conclusion

The Catawba County Technology Strategic Plan provides a framework for the effective management of technology. It offers a customer focused approach to implementing and managing technology from both an internal and external perspective. Internally it focuses on collaboration, shared input and providing the right tools for our employees. Externally it focuses on providing services that are expected by the public in today's world.

That world has seen an incredible amount of change in technology and the ways people live and interact with it in the past few years. Catawba County has always been viewed

as a progressive county that strives to use the latest technology to enhance the services provided to the public. The vision and efforts of County leadership should be commended since many of the past investments now provide a strong platform to move forward with the initiatives in this strategic plan.

The plan is dynamic in that it provides guidance in making technology decisions but like a map, allows the County to choose the best options to reach its goals. All technology decisions should be made from a strategic view point based on the initiatives set forth in this document. This ensures that all decisions can be made in an environment of flexibility but that the end result achieves the goals and expectations set by the County.

As the County moves into another exciting period of changing expectations, of growth, and of opportunities, it is critical that technology serve as a tool for improving efficiency and effectiveness, as well as, contributing to the safety and welfare of the public. Technology will allow the County to respond quickly to the demands of the increasing growth and needs that come with it. The future of Catawba County is encouraging and the administration and staff recognition of the value of technology only serves to enhance the potential of the County and reinforce its role as a leader among North Carolina local governments.

The Need for a Strategic IT Plan

Both internal and external environments of Catawba County are changing, and technology is a critical supporter of the development, implementation and enhancement of County services. As a result, it is imperative to outline an overall approach for the selection, use, and support of technology that aligns with County resources, business needs, and processes. Therefore, a County-wide approach based on standards, consistency, and compatibility will make more cost-effective use of technology.

Catawba County's Strategic Technology Plan provides direction for addressing both short-term needs and long-term requirements for cost-effective, practical technological solutions. Through the investment in and use of advanced technology, the County can place a strong emphasis on both external and internal customer services.

As is the case with all strategic plans, this plan is a "living document" which allows for changes over time and serves as a broad guideline for action. The nature of technological advances and changing County needs will mandate plan revisions. The plan is designed to link the County's needs and goals with information technology to provide improved government functions and enhanced customer service.

Scope of the Strategic IT Plan

Catawba County's Strategic Information Technology Plan provides a framework for the effective management of Information Technology (IT). The primary goal of IT is to support the business objectives of the County and to facilitate departmental efforts to provide efficient and effective services to the citizens, businesses, and visitors of Catawba County. The plan offers a comprehensive view of County accomplishments, as well as examines the current state of technology in Catawba County. Department technology efforts and ongoing activities will be reviewed for consistency with the strategic plan.

The plan also provides a foundation for an enterprise-wide approach to the management of information technology. Catawba County is a leader among local governments as it has moved from a silo approach (department-specific) to a process-oriented environment (cross-cutting services focused on the clients of government) with some of its recent projects.

Many future technology efforts will cross multiple departments with a single goal of providing services to the public, businesses, and visitors of Catawba County. This environment requires technology to be used as the basis for communication, interoperability, data and resource sharing. Furthermore, technology is a vehicle through which cost reduction can occur by increasing efficiency and effectiveness of services through the use of an enterprise architecture and standards.

This plan is not intended to limit department autonomy but rather to provide a comprehensive roadmap focused on solving common problems and enabling

collaboration. The plan is built on the IT management model which utilizes the best features of both centralized and decentralized IT management, support and decision making. The plan also requires the development of the IT architecture and standards which are critical for true economies of scale to be reached and for interoperability to occur.

The development of the strategic plan involved the following steps:

- Reviews of Technology Department studies and other studies
- Assessment of Strengths, Weaknesses, Opportunities and Threats (SWOT)
- Identification of Enterprise-based projects
- Review of strategic plans from other local governments
- Review of management models for information technologies
- Review of current technology trends
- Alignment mapping of technology initiatives to County vision and goals
- Strategic plan review

Major Trends in Local Government

Given the County's long tradition of providing customer-focused, quality services and its reputation for commitment to excellent, cost-effective government, Catawba County is encouraged to consider or continue the use of major trends outlined below. In addition, the list includes connections to information technology that enhance the work currently being undertaken in the County.

• **Benchmarking and Performance Measurement:** This trend involves ascertaining current organizational performance on a variety of key indicators, followed by monitoring and evaluation, as well as change management in order to facilitate improvement. This plan contains a number of measures that should be continued and monitored.

• **Customer Service:** This trend is centered on creating a high-quality product for citizens, businesses, visitors, and employees. Increased involvement and participation are critical, as is a reorientation in the approach to the end user as a customer. The technology department should continue to engage in providing high-quality services to its customers, both internal and external. In addition, customer feedback should be solicited at regular intervals to encourage communication and positive changes.

• **Economic Development:** Without fail, economic development has become a critical topic in local government. At the heart of economic development is infrastructure, and technology is no longer an optional infrastructure enhancement, but rather, as central to economic development recruitment as water and sewer lines.

• **Outsourcing:** Catawba County has an incredible cadre of talented public servants. However, the County has long realized that outsourcing and contracting with subject matter experts is critical to extend the reach of government. In terms of technology, Catawba County has paved the way for strategic partnerships and should continue to work with public-private and public-public partnerships to enhance technological capacities.

• **Responsive Government:** This trend is characterized by the need to develop a new type of local government complete with new ways of doing business based on innovation and positive change. Technology plays an essential role in creating a self-service government that is interactive, timely, and relevant regardless of the time of access or distance of the customer.

• **Use of Technology:** Technology is used by forward-thinking governments to continually enhance service delivery and foster a "work smarter not harder" approach.

Each of these trends is considered during the recommendations for future technology projects and should be included as critical components to mapping future investments.

Major Trends in Technology

In addition to considering the trends that are making governments more responsive and customer service oriented, it is important to consider the major technology trends from the private and public sectors. A list of some key trends is offered for consideration and inclusion in the future projects discussion.

Transition to a digitally converged world: Almost all aspects of telephony, television, video, audio, and other communication technologies are converging into single source platforms. This newly converged medium requires robust, secure infrastructure and mobile applications.

Support for legacy systems while migrating to more robust systems: Maintaining legacy systems while planning for their phasing out is critical. However, large-scale investments are required to replace such systems with newer technologies that are scalable for the future.

Increased importance of computer and telecommunications security: Technological security, both physical and logical, is critical to protecting the data and property collected and maintained by government.

Management of and investment in information technology: Information technology supports the functionality of government and requires high-level managerial attention, as well as appropriate investment. Governance structures and IT service management improve the quality of IT investments. Information Lifecycle Management is being used as a way to minimize the risks associated with these investments.

Support for a growing mobile workforce: New technologies are allowing the workforce to perform their job in the field as opposed to the office. This offers challenges to the technology department ranging from security to infrastructure. It also requires new tools like unified messaging that allows users to choose how they receive communications.

Server consolidation, virtualization and storage: Local governments deal with a multitude of applications that generate huge amounts of data. Virtualization provides the technology to consolidate servers and in combination with Storage Area Network (SAN) technology helps provide server and storage solutions in a robust environment.

Information systems are a necessary investment in the overall business planning and as a requirement to conduct future governmental affairs. Attention placed on governmental and technological trends provide a foundation and roadmap for examining future technology projects.

IT Governance Committee

The Information and Technology Governance Committee was formed early in the planning process to provide input and direction for developing a strategic plan for technology. The purpose of the committee is:

- To recommend policy direction on a countywide basis for all information technology, including voice and data communications. The committee will review information and office automation needs and recommend to the County Manager direction and priorities consistent with the long-term mission, goals and objectives that have been established for the County.
- To obtain broad organizational support for information systems efforts.

The duties of the committee are to:

- Develop, implement and maintain a long range plan for the investment in and allocation of computer resources:
- Participate in the development, implementation and maintenance of long range information technology plans, including goals and objectives supportive of the County's strategic and operational plans.
- Recommend Countywide policy and procedures regarding the use of all information technology, including voice/data communications, PC, and host based computer systems.
- Review application systems and other information technology needs as presented by the Technology Department and recommend priorities.
- Review annual departmental information technology plans, including project schedules, costs and required resources.
- Recommend appropriate levels of information technology resources based upon the Committee's knowledge of the County's information technology needs, goals and objectives.
- Review project progress and, at specific points, recommend whether projects should be continued or abandoned.
- Promote and provide education regarding information technology for the County organization.

The members of the IT Governance Committee are:

NAME	DEPARTMENT
Debbie Anderson	Purchasing Department
Barry Edwards	Utilities and Engineering
David Weldon	Emergency Services
Debbie Bradley	Personnel
Donna Spencer	Register of Deeds
Doug Urland	Public Health
Fred Miller	Cooperative Extension
Jacky Eubanks	Planning and Zoning
Jeanne Jarrett	Finance
Jerry Boggs	Communications
John Hardy	Mental Health
Judy Ikerd	Budget
Karen Foss	Library
Lee Worsley	County Manager's Office
Rick Pilato	Social Services
Lynn Baker	Sheriff's Office
Michelle Deese	GIS
Randy Moose	Tax Office
Miriam Powell	Personnel
Rick Cook	ITC
Rodney Miller	Finance
Sonja Bess	Mental Health
Susan Branch	Sheriff's Department
Toni Norton	Utilities and Engineering
Valerie Jones	ITC

The IT Governance Committee receives input from a number of other groups, committees and sources. In efforts to determine the technology needs of Catawba County Government and stay abreast of new technologies as they become available, members of the technology staff meet regularly with government and community leaders and users, as well as, research new trends and technologies. The main sources for this input is indicated in the chart below:

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                    Catawba County Board of Comissioners

                              County
                             Management

                           IT Governance
                             Committee

         Citizens                      Individual Departments

         Mandates                      New Technologies,
         Critical Issues               Expectations and Trends

  Public Safety    Technology    GIS Steering    Public      Technology
  Information      Officers       Committee      Schools     Department
  Committee        Group                                     Leadership/
                   /WPCOG                                     Staff
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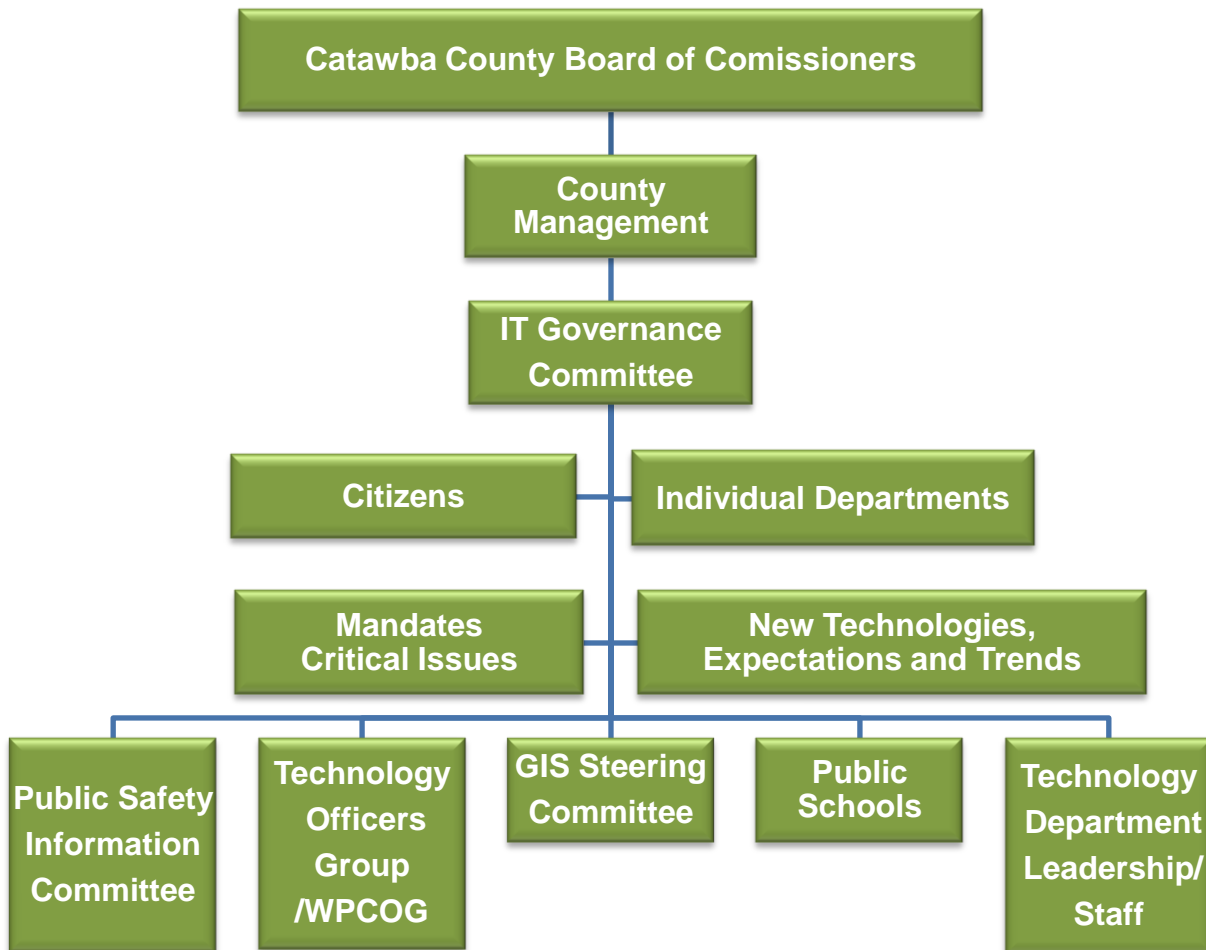
Technology Direction

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Vision

Catawba County Government will embrace technology to improve service and efficiency, and provide seamless access for the public. This will be accomplished in a spirit of customer service, partnership, and consultation with our stakeholders. Our guiding principles are quality, creativity, innovation, integration, and cost effectiveness.

Mission

Provide leadership and guidance in all aspects of technology to enhance government services.

IT Strategic Objectives

In order to accomplish this mission, Catawba County has enumerated eleven objectives to guide IT activities and maximize their benefits.

Empower   Place information, tools and resources in the hands of citizens and staff that allows them to make informed decisions.

Consolidate   Eliminate duplication and improve the utilization of existing IT resources.

Create   Deploy innovative, value-added technology solutions to meet County core missions.

Expand   Increase the number and quality of online services available to citizens, local government, businesses, educators, and other constituency groups.

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Technology Principles

Catawba County's Technology principles represent an integral part of the overall framework of the vision, strategy, mission, and values that guide the selection, deployment, and utilization of information technologies. These principles form the philosophy that informs and shapes technology decision making and provides criteria that governs the actions of decision makers and employees in performing their work. Catawba County's Technology Department will adhere to the following technology principles:

- Focus is centered on ensuring quality customer services in a timely, convenient, and efficient manner.
- Capture data once in order to avoid cost, duplication of effort and potential error. Systems should be automated to update in real time. Manual entry of data should be eliminated where possible.
- Manage information technology as an investment:
- Encourage partnership with the private sector, as well as, local, regional, state and federal agencies where appropriate;
- Allocate funds to cover depreciation to replace equipment and systems before the end of their life-cycle (retained earnings);
- Utilize technology to improve the effectiveness and productivity of County government, focus on maximizing return on investment
- Invest in education and training to ensure that technical staff understands current and future technologies;
- Evaluate business processes for re-engineering opportunities prior to implementing technology solutions;
- Technology solutions and training will be based on business needs to support county-wide strategic goals.
- Technology selection and implementation will be based on the business needs of the organization. New technology should integrate with the existing technology architecture and be consistent with communications and information technology plans.
- Adhere to a standard set of technology components (operating system platforms, programming languages, desktop products) to maximize return on investment.
- Adhere to non-proprietary, open-system standards to provide flexible, robust solutions that allow interoperability of use.
- Research commercial off-the-shelf software where possible
- Minimize in-house customization to speed up the delivery of new business applications and reduce cost
- Concentrate on web based applications
- Implement innovative, but proven technologies and introduce new technologies using pilot projects where the technology, its benefits, and costs can be evaluated prior to a large-scale deployment.

- Manage the enterprise network as the fundamental infrastructure to provide user friendly, flexible, expandable, and maintainable connectivity for both internal and external customers.
- Utilize both internal and external sources where financially feasible (consultants/contractors/vendors) to extend the knowledge base of technology solutions and extend our limited resources.
- Keep the workforce and public informed and create an environment of collaboration and trust to secure buy-in from the user community.
- Investments in technology will be managed from a full life-cycle perspective; multi-year planning and annual allocation funding strategies will be used to replace systems, equipment and infrastructure before life-cycle end.

Changing Roles of Technology

The vision, mission and principles mark a significant departure from the traditional governmental silo approach and from some of the methods used in Catawba County prior to this plan. While the County has standardized hardware and desktop software and began moving to an enterprise approach, many of the projects are still focused on the department and is department driven. The following chart illustrates some of the major differences between the two approaches.

Silo Approach	*Enterprise Approach*
Departmental Focus	***Enterprise Focus***
• Planning done at department levels	• Enterprise-wide strategic planning
• Limited cross-departmental decision- making	• Comprehensive, cross-departmental projects
Hardware, Software, Architecture	***Hardware, Software, Architecture***
• No Standardization	• Standardization
• High support requirements	• Economies of scale and support
• Redundant or incompatible applications	• Common User Interface
Technology Skills	***Technology Skills***
• Limited and diffused skill base	• Sharing of technical skills
• No sharing of resources	• Skill and knowledge transfer
Function-based Design	***Process-based Design***
• Redundant data capture and storage	• Shared data, relational databases
• Functional applications	• Integrated applications

Not only does the vision, mission and principles mark a significant departure from the traditional governmental approach, the role of IT is changing. In the past, IT was that group of individuals that kept the technology running. They installed machines and wrote programs. While IT still provides those services, they are now expected to learn business processes and help design new and better ways to use technology. They are faced with the complexity of today's IT technology environment, where linking and integrating disparate technologies have largely replaced deep focus on any one technology. IT personnel are interacting with other IT staff, business constituents, and management in ways they have never needed to in the past. These new roles require staff members with strong verbal and written communication skills, analytical talent and process skills, and business smarts.

The table below illustrates the difference in the old IT role and the new IT role. This has many implications for Catawba County Government. The current operation is moving toward the new technology role but still has ties to the past.. As Catawba County Government moves into the future, IT must become more involved with the departments in a different way and be able to analyze the business process and flow and then to make recommendations. The IT department must be able to understand all the systems, how they interact and promote the value to the enterprise as opposed to a departmental approach.

Old Technology Role	**New Technology Role**
Internal Focus	**External Focus**
Write the Applications	**Integrate the Applications**
Design a System	**Design a Process**
Manage Systems	**Manage Business and Vendor Relationships**
Back Office/Code/Technical	**Front Office/Communicate/Empathize**
IT Context, Inward Focus	**Business Context, External Focus**
Programming Languages	**Requirements Translation**
Software Revision Management	**Business Change Management**
System Flow	**Process Flow**
Specialty, Value	**Commodity, Outsourced**
Collocated with Peers, Business	**Globally Dispersed, Virtual Teams**

Source: Forrester Research, Inc August 10, 2006
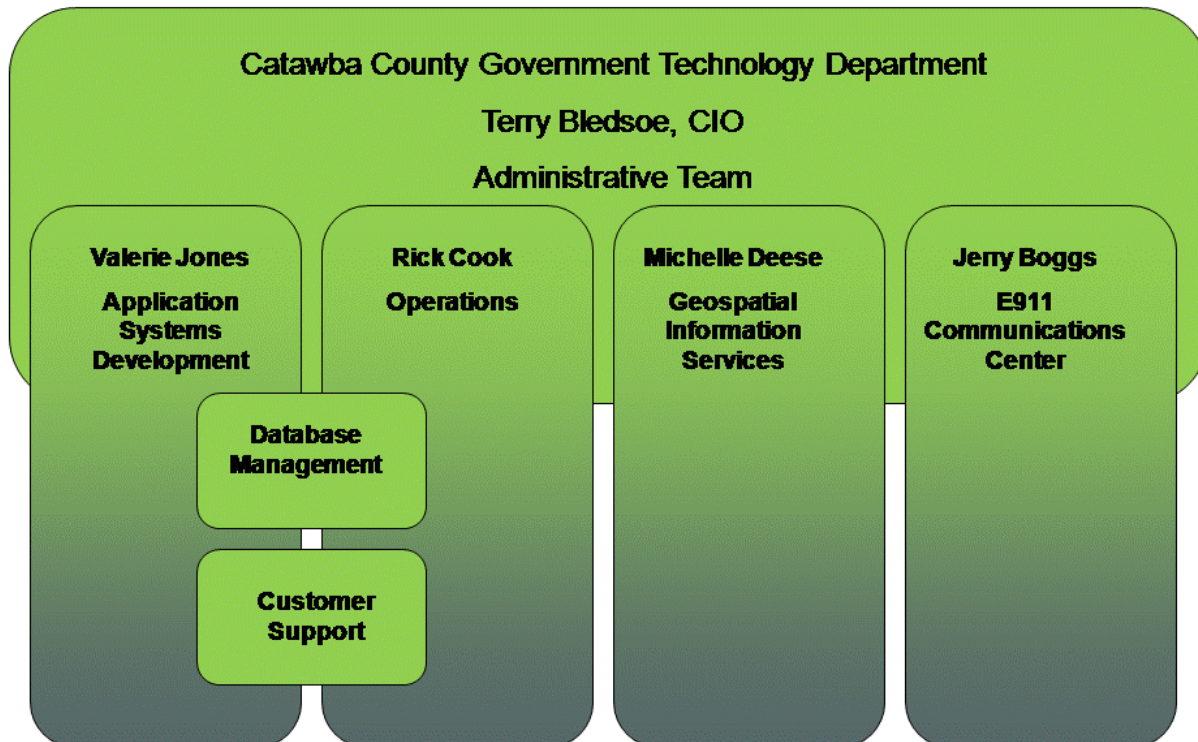
IT Organizational Structure

The Technology Department currently has 52 total staff positions, 21 in the IT Division, 5 in the GIS division and 26 in the E-911 Center. The total operating budget for 2006-07 is $ 3,749,306 million, which includes $ 2,593,040 million in the IT and GIS Division and $1,256,266 million for E-911. The 911 Division operates three shifts around the clock for emergency communication services.

The Technology Department structure consists of four distinct divisions and three overlapping divisions. The four distinct divisions are: Application Systems Development, Operations, Geospatial Information Services, and E911 Communications. The three overlapping divisions are: Administrative, Database Management, and Customer Support.

The Administrative Team is made up of the Chief Information Officer and the leaders of the Application Systems Development Team, Operations Team, GIS Team, and E911 Communications Team. This team provides the leadership and guidance for all the other teams.

Since the services and personnel of the Database Management Team and the Customer Support Team cross both the Application Systems Development Team and the Operations Team, they are subdivisions of the major divisions.

A breakdown of the Technology Department Organizational Structure is included below:

Catawba County Government Technology Department

Terry Bledsoe, CIO

Administrative Team

Valerie Jones	Rick Cook	Michelle Deese	Jerry Boggs
Application Systems Development	Operations	Geospatial Information Services	E911 Communications Center

Database Management

Customer Support

Division Breakdown and Definitions:

Administrative Division (Tier 1): Responsible for departmental budgeting, project coordination, and strategic planning. All areas of the Technology department report to the Administrative Division.

Staff
- Terry Bledsoe, CIO
- Jerry Boggs, E911 Communications Center Administrator
- Rick Cook, Operations Administrator
- Michelle Deese, Geospatial Information Services Administrator
- Valerie Jones, Application Systems Development Administrator

Services
- Administrative support for daily operational activities
- Integration of technology into all aspects of the organization
- Fostering of initiatives and innovation
- Project and project portfolio oversight
- Fiscal management including purchasing, budgeting, and budget review
- Business case justification and cost/benefit analysis
- Contract administration
- Asset management including equipment, hardware, and software
- Personnel recruitment, retention, and termination
- Operation performance management
- Development and implementation of all plans and policies, including architecture, security, standards, purchasing, and services

Application Systems Development Division (Tier 2): Responsible for all applications, application development, and business systems analysis.

Staff
- Valerie Jones, Application Systems Development Administrator
- Susan Lowman, PeopleSoft Administrator
- Donnie Albert, Database Administrator
- David Abbott, IT Project Manager
- Marcia Hardy, Webmaster/Training Coordinator
- Michelle Williams, Programmer/Analyst
- Penny Tate, IT Project Manager
- Ray Lemmond, Programmer/Analyst
- John Mull, Programmer/Analyst
- Lindsey Cearlock, Application Specialist

Services
- Research of enterprise applications
- Procurement and development of applications(including website)

- Administration and maintenance of applications
- Integration of purchased applications
- Assistance for other departments in the selection, installation, and maintenance of purchased software
- Incubation of new applications and prototype development
- Application of pilot projects launching and oversight
- Systems analysis and business analysis

Data Management (Tier 2): Responsible for gathering, storing, and providing access to data, databases, data warehouses, and other repositories of information.

Staff
- Rick Cook, Operations Administrator
- Valerie Jones, Application Systems Development Administrator
- Donnie Albert, Database Administrator

Services
- Administration of databases and data warehouse systems
- Data backup, mirroring, and recovery
- Data extraction, transformation, loading, and analysis
- Provision of access to data through data mining tools, including OLAP-based querying and reporting tools
- Data quality architecture planning
- Data storage
- Document and records management
- Media and digital document conversion

Operations Division (Tier 2): Responsible for all systems and networks and their day-to-day operation.

Staff
- Rick Cook, Operations Administrator
- Stephanie Pannell, Senior Network Specialist
- Bob Rowe, Network Specialist
- Mickey Lail, Network Specialist
- Ray Hash, Network Specialist
- Peggy Eades, Network Specialist
- Dennis Weaver, Network Specialist
- Doug Bumgarner, PC Specialist
- Savannah Glass, PC Specialist
- Norm Tipton, SS PC Specialist

Services
- WAN and LAN transmission

- Operation, maintenance, repair and development of all operating systems, networks, and network infrastructure, including servers and hardware components
- Wireless development, maintenance, and access
- Purchase of systems and network components
- Provision of Internet services, including Voice over IP and Internet conferencing
- Secure transport of data, including systems security, authentication, disaster recovery, and firewall
- Server backups
- Remote access capability
- Knowledge and implementation of protocols
- Provision of telephony services, including long distance, PBX, line management, voicemail, voice response, call conferencing
- Cable installation and maintenance
- Technical support for LAN and network-attached PCs
- Network resource management and scheduling

Customer Support (Tier 2): Responsible for end-user outreach, education, and support.

Staff
- Rick Cook, Operations Administrator
- Marcia Hardy, Webmaster/Training Coordinator
- Savannah Glass, PC Specialist

Services
- Customer relations and service
- Development of service level agreements
- Development and administration of customer satisfaction surveys
- Service complaint resolution
- Applications planning and advice
- Help desk services including resolution of technical problems in the areas of office applications, network access, e-mail, Web access, desktop configurations, and general computing
- End user education and training
- Technology demonstrations
- Development of technical support manuals and guides
- Administration of technology upgrades, replacements, and general moves, adds, and deletes

Geospatial Information Services (Tier 2): Responsible for the development, maintenance, and dissemination of the County's digital geospatial data.

Staff

- Michelle Deese, Geospatial Information Services Administrator
- Ralph Dell, GIS Application Specialist
- Greta Bumgarner, GIS Analyst
- Kate Sturgin, GIS Analyst
- Renee Hart, E911 Addressing Coordinator

Services

- Coordinate all GIS activities and data.
- Assemble thematic data (elevation, land cover, soils, property boundaries, etc.) in a common geospatial framework within a single data warehouse
- Make geospatial and related information available to citizens
- Protect county investments in data development
- Provide county departments with the data, tools, and training to leverage the county investment in a community GIS
- Provide county geospatial information via the Internet and the World Wide Web
- Provide vital information to the 911 Communications Center
- Foster data sharing partnerships with both governmental and private sector entities to facilitate the County's involvement in economic development, environmental conservation, public safety, land use and infrastructure initiatives

E911 Communication Center (Tier 2): Responsible for providing emergency and administrative communications for the citizens of Catawba County.

Staff
Jerry Boggs, Communications Administrator
Donna Stikeleather, Administrative Assistant
Brian Drum, 1st Shift Supervisor
Larry Simpson, 2nd Shift Supervisor
Marty Huffman, 3rd Shift Supervisor
Mitch Campbell, 2nd Shift Senior Operator
Brandon Edwards, 3rd Shift Senior Operator
Alan Pope, Telecommunicator
Laurie Dial, Telecommunicator
Tammy Saunders, Telecommunicator
Sharon Sumpter, Telecommunicator
Lori Sigmon, Telecommunicator
Cindy Lester, Telecommunicator
Steven Parkhurst, Telecommunicator
Chad Pate, Telecommunicator
Cindy Hodge, Telecommunicator
Alena Greer, Telecommunicator
Jesse Kale, Telecommunicator
Bryan Jolly, Telecommunicator
Alea Taylor, Telecommunicator
Billy Jones, Telecommunicator

Meredith Fox, Telecommunicator
Rhonda Robinson, Telecommunicator
Jodie Lynch, Telecommunicator

Services

- 911 Enhanced Emergency Call Taking
- Law Enforcement, Fire, EMS, and Rescue Dispatching
- Computer Aided Dispatch
- Non-Emergency Call Taking
- Public Relations, Training and Instruction
- Maintenance of the communication infrastructure
- Customers, Mandates, and Strategic Priorities

Recently Completed Studies

The Catawba County Technology Department has recently completed or been the subject of a number of studies concerning the state of technology in the County. These studies provide vital information into the strengths, weaknesses, and opportunities that exist. Specifically the plans reviewed and that contributed to this plan were:

1) **The Strategic Opportunity Assessment Report (SOAR)**
   Robert D. Hanson, Chief Information Officer, Sarasota County Government
   James L. Ley, County Administrator, Sarasota County Government
   February 12, 2005

2) **The Catawba County Technology Disaster Recovery Plan**
   Catawba County Technology Department
   July 2006

3) **The Catawba County Web Page Design Plan**
   Catawba County Technology Department
   July 2006

4) **The Catawba County Technology Staff Evaluation Report**
   Catawba County Technology Department
   September 2006

Brief summaries of these studies are included:

Strategic Opportunity Assessment Report (SOAR)

A strategic opportunity assessment was conducted in February of 2005. The assessment specifically focused on the structure, technologies and leadership of the Information Technology Department . The report addressed the following categories: strategy, staffing, infrastructure, software and leadership. The information included below is from each of those areas and targeted to technology.

Strategy

- Refocus the Catawba County Internet site from an inward "all about the county government" to an outward "all about Greater Hickory" web presence.
- Refocus government and school system data and voice network technologies from parochial necessities to community investments.
- Leverage technology to facilitate the transition of County leaders in the areas of strategic planning, business planning and performance management.

Staffing

- Review staffing reductions. Consider the addition of a project manager/ consultant position. Consider establishing a fulltime security position.
- Review compensation and benefits on a regular basis.
- Identify contingency plans for IT skill

Infrastructure

- The fiber backbone is a critical community asset that can be expanded as necessary and justifiable through the utilization of higher capacity equipment.
- Conduct a detailed inventory of equipment identifying the computer, age, and value added purpose, primary user and software installed.
- Conduct a cost analysis effort focused on arriving at a per computer unit cost.
- Leverage investment with providers to contribute to the creation of a community network.

Software

- Investigate partnerships/ contractual relationships with application service providers.
- Monitor and meet regularly with vendor representatives.
- Increase investments and collaboration in community facing, community building applications.
- Work with the North Carolina Association of Counties on a statewide tax collection software package.

Leadership

- Bring in a Chief Information Officer(CIO) as a change agent and strategy enabler chartered with harnessing the possibilities afforded by Catawba County's investments in technology.
- Collaborate with other government entities to bring networks and infrastructures together into a shared, more efficient structure.

The Catawba County Technology Disaster Recovery Plan

In the Spring of 2006, the technology department undertook the task of writing a disaster recovery plan. The plan was limited in scope to the recovery of the data center. For that plan an operational analysis, a business analysis, and a disaster risk analysis were performed to learn as much about the use of technology as possible. This consisted of a comprehensive review of the day-to-day operation of the center, business uses of technology, and possible risks to technology. These operations were documented and included in the plan. The review looked for any flaws or weaknesses in the system and either corrected them when they were revealed or documented them and made a recommendation in this plan.

A second reason for these analysis was to learn as much as possible about the data center, its services, its applications, and the network that supports it. Gaining this knowledge now will help Catawba County to better prepare for a disaster and also help us to be better prepared to prevent a disaster from occurring in the first place.

Areas that were analyzed:
- Physical security
- Vulnerability and network security
- Critical services and critical personnel
- Business processes and priorities
- Passwords and user accounts
- Backups procedures and data storage
- Offsite storage
- Internet use and E-mail
- Electronic Communication Policy
- Antivirus
- Information technology policies

Below is a summary of the recommendations from the disaster recovery plan:

- Disaster recovery plans usually fall into three levels: 1) Simple backup and recovery, 2) Cold, off-site recovery, and 3) A working duplicate site or mirrored site. Simple backup and recovery ensures that all data is backed up on a regular basis and that the backups are stored in a safe location off site. In the case of a disaster, the hardware and software would be restored to the last backup whenever facilities were restored. A cold, offsite recovery selects a site that could be converted into an operational IT center in a short period of time. Equipment is rush ordered and bought back online at this alternate facility as soon as possible. The third option is a working duplicate site or mirrored. It would contain all the equipment of the main site and operations would just switch to this site in the case of a disaster. For IT disaster recovery, Catawba County Government is planning for a level three disaster recovery system. Level three calls for a duplicate or mirrored site for backup. With blade, SAN and virtual

technology, it would be possible to provide for almost instantaneous recovery from a disaster.

- Due to the nature of many local government specific applications, the County has a large number of fileservers and related support peripherals. It is recommended that the County consolidate servers using virtual server technology to decrease rising support cost and to provide a more stable, redundant environment.
- The infrastructure provides for a 100MB LAN speed that could be increased to Gigabit speeds. The LAN is built on sound principles and is very robust and stable. However, the LAN is built with several single points of failure.   It is recommended that future planning for infrastructure consider building in redundancy by using ring configuration. Redundancy could be addressed with plans to move to a integrated communication and data network in a wireless environment.
- It is recommended that the Password Policy be updated to industry standards and put into practice.
- Catawba County does back up systems every 24 hours. Applications running and storing data on the servers are backed up daily. However, many users are storing data on their workstations. Best practices would force storage on the servers so the data would be backed up. Training needs to be conducted with users to ensure proper storage of data on the servers.
- Continue to improve security functions on all platforms. Strictly enforce policies and procedures when violations are detected. Regularly let users know the importance of keeping their passwords secret. Let users know how to choose strong passwords that are very difficult to guess.

Catawba County Web Site Design Plan and Policies

The Catawba County Web Site Design Plan and Policies was created to ensure that visitors to the Catawba County Web Site found it informative, attractive and easy to navigate. It was also created to ensure that visitors to our site experienced the same look and feel regardless of what department they were visiting or what service they were requesting. The plan addresses a standard website design as well as new functionality such as language options, accessibility, and automatic service delivery.

In addition to design, the plan addresses issues such as consistent use of domain names, liability disclaimers, user agreements, privacy and security notices, and external link policies.

The following is a summary of the features included in the plan.

- All County departments and offices will utilize Catawba County's standard website design for their department/office website. This will ensure that when visitors surf the County Web Site they will recognize from its graphic presentation and standard usability features that they are interacting with Catawba County and its related services and programs. It is recognized that departments may have special logos and designs of their own. The Technology Department will work with them to ensure that a consistent look and feel exists across the Catawba County website while being sensitive to department design needs. A special provision is made for departments that need a custom website.

- All County Departments must use www.catawbacountyNC.gov/xxx as their website domain. Special request domain registrations must be submitted to ITC and approved by the Chief Information Officer (CIO).

- Catawba County is committed to making the information on www.catawbacountyNC.gov accessible to the widest variety of users, including those with disabilities. In this regard, we: Strive to present information in formats that are compatible with the needs of disabled persons and the hardware and software used by them for the Internet; Welcome and regularly solicit feedback from disabled users on how www.catawbacountyNC.gov can be improved for that community of users, and; Provide inaccessible information to disabled users in a more desirable format or medium upon request. We monitor the development of international accessibility standards, implementing those that are consistent with our mission and statement of values.

- Catawba County will use a common web site development tool to develop the web site. Using this tool, templates and style sheets will be developed for departments to use as they develop and update their web pages.

- Before any page is made public it must be reviewed and approved by either the PIO (Public Information Officer) or the Webmaster. The page is to be reviewed for accuracy, correct spelling and grammar, and for compliance to the web design standards. Web pages that interact with applications and databases must also be approved the ITC Security Officer.

- In order for web pages to be useful to citizens they must be timely and contain up to date information. Websites must be updated or reviewed by the responsible party at least every six months.

- Catawba County has a diverse population. In order to address the needs of this population, Catawba County will provide a translation program on the home page and on each department home page. In addition, Catawba County encourages all of its departments to translate documents to multiple languages and make them available via the website.

- A calendar feature will be offered on www.catawbacountync.gov as a convenience to our users. This calendar will offer multiple views for the user and also have a search feature. All additions to the calendar should be approved by the PIO or designee.

- Newsletters and Publications that are sent out through email must not include an attachment such as a PDF or a word document. The newsletter should contain brief information about what is contained in the newsletter and then a link back to a permanent link. Newsletters and other publications will be maintained by a content management system that will distribute them on a scheduled basis. Documents will be stored and available to the public for viewing via the web.

- RSS is a format for syndicating news and the content changes. RSS looks for "recent changes" on a page and informs users of the change. Once information about each item is in RSS format, an RSS-aware program can check the feed for changes and react to the changes in an appropriate way. RSS-aware programs called news aggregators are popular to track changes to web pages of interest to a particular group. Catawba County will offer RSS feeds to all news that is posted.

- Catawba County will provide a web based subscription service for the convenience of its users. Users will be able to go online and subscribe to newsletters and other publications that Catawba County produces on a periodic basis. Future uses of the subscription services may include access to a citizens alert notification system.

- Catawba County will maintain a single privacy and security policy that is posted on the standard county footer on the home page and redesigned department

pages.

- The Catawba County web site will clearly post a single disclaimer that applies to all content published on the county web site. Any revision, addition or deletion to this disclaimer must be approved by the County Attorney's Office. County agencies should reference this disclaimer and should not compose and draft other versions of disclaimers. Catawba County will post this disclaimer on the standard county footer on the home page and redesigned department pages.
- The Catawba County web site will post a footer at the bottom of each page that contains links to the Catawba County Liability Disclaimer and User Agreement and to the Privacy and Security Notice. Other
- All applications proposed for use by the public will undergo a review and sign off by the ITC Security Officer. This review should take place prior to the development of the proposed application, and no application is to be deployed prior to approval by the ITC Security Officer. All deployed applications will be subject to periodic review and testing to ensure that they do not impose a security threat to county operations or assets.
- All departments shall provide contact information on the department website. If the department provides an e-mail address, messages sent to that address must be answered. The department is responsible for prompt and proper responses to requests initiated by the website.

The Catawba County Technology Staff Evaluation Report

The study analyzes the strengths of current staff, the makeup of the teams, the current workload and views trends that may impact future workloads. This study recognizes that there are many factors that determine the number of staff needed and their performance. Some of these factors are within the control of the department. They include assignments, training, proper tools and project workflow. Factors that are sometimes beyond the department's control are an ever increasing workload, assignments that are mandated but not anticipated and budget restrictions.

This study begins with some of the factors and assumptions that impact technology and staffing resources:

Factors and Assumptions

1. The number of workstations impacts the number of support staff needed. Catawba County Government has 1650 workstations.
2. The number of users impacts the number of support staff needed. Catawba County Government has 1113 active users.
3. The number of applications supported impacts the number of support staff needed. Catawba County Government supports at least 81 different major applications and approximately 250 total applications.
4. The number of in-house applications verses vendor applications impacts the number of support staff needed. Catawba County Government has 18 in-house supported applications.
5. The number of vendor operating systems impacts the number of support staff needed. Catawba County Government has 10 distinct vendor operating systems and their platforms.
6. The type of network, distributed verses centralized impacts the number of support staff needed. Catawba County Government has a distributed network.
7. The use of purchasing standards for hardware and software impacts the number of support staff needed. Catawba County Government has purchasing standards for new hardware and a common desktop software suite.
8. The level of training impacts the number of support staff needed. Catawba County Government has invested a limited amount of resources in IT staff training and has only required limited technology training of all staff.
9. The technical level of the users impacts the number of support staff needed. Catawba County Government does not test the technical level of new applicants for specific positions.

From the study the following recommendations were made. Each have a impact on the number of resources needed for technology support and to some extent the number of resources needed by other departments in their day-to-day operations.

- Project management skills need to be strengthened. Projects need to have well defined specifications. New projects should go through a formal business case

analysis which include risks and risk mitigation before being funded. Projects should have a project manager from IT and from the requesting department. Each project should have criteria for determining when it is complete and a formal process for changes. Before the project is complete, knowledge transfer to the requesting department must be completed.

- Create an environment in which creativity and innovation is embraced. The staff has been geared to a service philosophy that ensures maximum uptime. While this must be maintained, they should be challenged to look for creative and innovative ways to provide services.

- Budgetary constraints have limited the amount of training that the staff was given. This leads to more time required to support a product and thus more resources needed.   Training must be considered as part of the cost of implementation.

- The staff is straining under the huge workload created by all the programs that they have to maintain. Currently they are maintaining at least 81 major applications. Each of these applications requires maintenance and upgrading, as well as, clerical tasks such as renewing licenses. Some of the applications require extensive personnel and equipment resources. For example, one programmer is dedicated almost entirely to the tax office to support the applications that they are running.

- Implementing technology automation requires understanding of technology resources. For example, if a process within a department is automated so that information flows from one system into another and replaces manual entry the department will immediately experience a significant reduction in workload. On the other hand, the Technology Department will experience a small but not insignificant increase in their workload. By small increase, this means supporting another 24X7X365 application with servers and updates in an environment where the technology cannot be out of service more than a few minutes at any point in time.   As more efficient technology and business processes are deployed to the departments, it must be realized that Technology will need more resources for the shift in the workload.

Catawba County Government Technology Metrics

Organization

- Number of full time personnel 1112.6 Hourly 34.78
- Number of full time IT personnel 21
- Number of external contractors and consultants: None Full Time, Limited PeopleSoft Consultant.
- Number of IT personnel as a percent of total employees 21/1112.6 = 1.9
- IT personnel cost as a percent of the IT budget $1,422,709/$2,270,452=62.66%
- IT personnel cost as a percent of revenue $1,422,709/$199,362,302=.7%
- IT spending per total number of employees $2,270,452/1112.6=$2040.67

Service Level

- Number of IT users per IT employee 1112.6/21= 53. Data from 49 Local Government Entities in NC, 64.94 users per IT employee.
- Number of Workstations supported per IT employee 1650/21= 78.57 (does not include peripherals) Data from 49 Local Government Entities in NC, 48 PCs per IT employee.
- Support calls per employee per month .568 and per Operations IT employee(11) per month = 57.5

Budget

- IT budget percent of total budget $2,270,452/$199,362,302=1.14%
- Rate of IT budget change = 9% for 2006/07
- Training as a percent of total IT budget $24,500/$2,270,452=1.1%

Applications/Operating systems/Storage

- 81 major applications (multiple users and sights)
- 250+ minor applications (specialty or small user base)
- 18 in-house developed and supported applications
- 10 different vendor operating systems
- 70+ servers distributed over 5 locations
- Over 4 terabytes of stored data

Strengths, Weaknesses, Opportunities, Threats

An assessment of the strengths, weaknesses, opportunities, and threats related to technology was completed from interviews, committee meetings and studies. The following bullet points highlight the findings in each respective category.

- The County faces many of the same challenges as other state and local governments including limited resources, limited IT staff, aging and disparate technology systems, and staying current with technology advancements. In order to retain a competitive environment, in terms of economic development and citizen service, Catawba County must continue to engage in forward-thinking, strategic technology investment.
- The cost of complying with the strategies defined in this plan and with the suggested IT policies and standards may be significant in some cases. The implementation phase of the plan will include the development of an impact analysis which will identify potential costs associated with implementing sections of the plan. A business case analysis will also assist in making determinations of project feasibility.
- Catawba County does not face some of the challenges of its peer governments because of the previous investments in technology. The wide-area network (fiber backbone) is a significant advantage for the County but should be made redundant. The County does not have any significantly troubled IT projects, which is a testament to the IT staff and departmental employees. Furthermore, through the work of the IT department staff, many of the turf issues and departmental-centric thinking has been eradicated, which is one of the most exciting and promising results of the effort.

The following is a brief summary of the SWOT analysis:

Strengths

Catawba County has a variety of strengths identified for the current environment. The strategic plan will build on these strengths. A high level list of the strengths includes:

- A base level architecture including communications media and fiber infrastructure
- Current investments in infrastructure, VoIP, and the SAN, provide strong building blocks for the future
- A high-quality World Wide Web presence for citizens, visitors, and employees
- Extensive Geospatial Information Systems (GIS)
- A single department overseeing technology infrastructure, hardware, and software
- Standardization of platforms and information systems
- Administration's commitment to technology
- Business Process Reengineering and similar concepts

- High-quality people resources
- Centralized software applications which improve productivity and centralize data

Weaknesses

Some of the current weaknesses found in Catawba County with respect to IT include need for business process and flow analysis, project management, governance, and resource consolidation. Strategies are identified to improve upon these areas. A high level list of the weaknesses includes:

- Need for a business analyst
- End user training
- Lack of infrastructure redundancy
- Lack of mature governance structure
- Lack of project justification
- Need for server and application consolidation
- Limited financial resources

Opportunities

Opportunities such as the emerging technologies, growing staff capabilities and increased management awareness of technology are central to the strategies included in the plan. Major identified opportunities include:

- Emerging technologies including VoIP, unified messaging, SAN, and virtual technology is being implemented
- Growing partnerships with other local governments, state/federal agencies, and private sector
- Increased management awareness of technology
- Enterprise licensing for software and leveraged buying for hardware and services
- System consolidation
- Providing enabling technology to field staff to support service delivery
- Improving technology where current use is limited
- Increased Public Safety service levels using NG 911 and interoperability technology

Threats

Threats, including security breaches, potential data losses due to viruses, malice, or natural disasters, and unmanaged expectations, must be acknowledged and planned for to ensure that they do not create an unstable information technology environment. These threats include:

- Security of technology, applications, data and networks
- Changing user expectations(project scope creep)
- Short technology lifecycle (rapid pace of change)
- Reliance on manual processes to enter and maintain data systems
- County and state mandates along with legal rulings affecting existing systems and new acquisitions
- Lack of redundancy in some systems
- Email attacks, spam, and storage issues

The SWOT analysis provided an abundance of useful information about the organization, the environment, and the future of Catawba County.

Current IT Project Summary

The Technology Department works with other departments on a project basis. Listed before are the current projects that are being addressed by the Technology Department along with a status indicator.

Microsoft Office Upgrade: Replace Current Standard Desktop Software with the latest version. The current Microsoft Office applications have become incompatible with other agencies. The versions currently used were released from 1997 to 2000 and are outdated. The new release provides additional functionality and compatibility for County business processes. This project began in Spring 2007 and will be completed within six months.

60% Complete
On Budget
On Time

Citizen Alert Notification System: Implement a reverse 911 system to provide automated outgoing calls in the event of emergency. The system will also be used to notify target populations with various information.

This project is being addressed jointly by the Technology Department and Emergency Services. A vendor has been selected for the Citizen Notification System and partnerships have been established with the three school systems, CVCC, the two hospitals, and the municipalities. Each will be able to use the system for emergency notification and other items related to their customers. The ongoing cost is being shared by the members of this partnership. The system is scheduled to be in partial operation in January and full operation by June 2007.

80% Complete
On Budget
On Time

Mobile Access for Building Inspectors: Technology support for building inspectors to electronically record and transmit inspection data from construction sites has been implemented. This allows inspection results to be available immediately (as opposed to next business day), prevent duplicate data entry, and allow building inspectors to work from their vehicles and homes rather than spending time each day at the office. Target date of September 2006. Additional mobile form applications will be added for other departments during the next two years.

Complete: The system is in production with all inspectors.

100% Complete
On Budget for Year
Over Budget for Project
On Time for Year
Over Time for Project

Mobile Field Inspection Tools for Food and Lodging and Well and Septic Inspectors: Technology support for inspectors to electronically record inspection data from sites has been implemented for Food and Lodging and is being implemented for Well and Septic. This will allow inspection results to be available immediately, prevent duplicate data entry, and allow data to be transferred to state agencies.

70% Complete
On Budget
On Time

Mobile Field Tools for Public Health: The current billing and clinical system has been replaced with a program called Care Anywhere from a hosted Application Service Provider(ASP). Field notes that used to be gathered on paper are now collected electronically and transferred into the system.

95% Complete
On Budget
On Time

Mobile Field Based Reporting for Law Enforcement: Using this technology and application, law enforcement can enter reports in the field and automatically transfer the information into the records management system. This replaces a manual transfer of data from word processing documents.

70% Complete
On Budget
Behind (Vendor Issue)

Document Imaging System: Continue implementation of a document management/imaging system to allow more reliable access to, sharing of and retrieval of documents for internal departments and citizens from the Internet. Emergency Services, Personnel and the County Manager's office have been

implemented. The Finance Department is scheduled to begin using the system in Spring 2007.

80% Complete
On Budget
On Time

PeopleSoft Human Resources Upgrade: The PeopleSoft Human Resource system was updated as required to meet Federal and State regulations for payroll processing. Added features include the ability to offer online employment applications and an integrated application process to eliminate many hours of data entry for staff. In addition, PeopleSoft has been identified as part of the enterprise architecture and is being updated on a constant basis to provide common services across all departments..

100% Complete
On Budget
On Time

New Jail Facility: Provide technical direction and ongoing support for the new Jail Facility in Newton. ITC staff is helping install and support video visitation, security systems, data network and other applications needed to manage the new facility. A position for a second shift network specialist was in November to assure that adequate coverage is provided for the jail and other public safety agencies. Planning and purchasing phases are complete. Equipment for the security system has been delivered partially installed.

90% Complete
On Budget
On Time

Disaster Recovery Plan: Develop a formal Disaster Recovery Plan for information systems used by County departments to conduct business and provide services to citizens. The plan has been written and we are correcting areas of vulnerability.

100% Complete
On Budget
On Time

Virtual Technology/ SAN(Storage Area Network) Project : The Disaster Recovery Plan revealed that a redundant data center was needed to provide for recovery in case of a incident in the main center. It also revealed that the current server structure and replacement model could not be maintained at current funding levels. A SAN solution has been purchased and is being installed. It is scheduled to be operational by June 2007 and fully implemented by June 2008.

60% Complete
On Budget
On Time

VoIP Feasibility Study: Complete a feasibility study and return on investment analysis of implementing a Voice over Internet Protocol (VoIP) system for telephone and network services. Evaluate options and make a recommendation for the best method(s) of providing these services throughout the agency in the future. Completed by December 2006. The study showed that a new VoIP system would be less expensive and provide better service. We are proceeding with a solution using the existing phone payments to switch to the new system. The new VoIP system is scheduled to be completely installed by August 1, 2007.

100% Complete
On Budget
On Time

VoIP Project: The VoIP study showed that a new VoIP system would be less expensive and provide better service. This moves the County to one phone system that integrates with desktop software to provide for unified messaging. In November the Board of County Commissioners approved the VoIP(Voice over Internet Protocol) Project. In December, they approved special funding arrangements for the project negotiated by the Finance Department. Installation of the system began in January 2007. The new VoIP system is scheduled to be completely installed by August 2007.

60% Complete
On Budget
On Time

Web Site Redesign: In coordination with the Public Information Officer, the current Catawba County web site was evaluated and upgraded to offer new services to the public. The redesign maximizes ease of use, online services provided and information available to the public. A web design plan was completed in June 2006 and redesign of the web page begun. The updated website was brought online in August 2006. Currently all department web pages have been updated to the new design. New features include language

translation, subscription services for publications and RSS feeds. Due to the dynamic nature of the web site, work will continue indefinitely on this project.

100% Complete(Initial Phase)
On Budget
On Time

Wireless Connectivity: Expand wireless capabilities by providing wireless Internet services in specified areas such as the Public Libraries and the Register of Deeds offices. This will also facilitate mobile applications for employees in the future. Will complete within 3 months of receiving grant funds.

This project was studied in conjunction with the VoIP project. The solution has been identified and we are in the final engineering phase. This project is scheduled for completion in first quarter 2007.

50% Complete
On Budget
Behind (Scope Change)

Special Needs/ Critical Care Database Project: Multiple departments have been maintaining either a special needs database or a critical care database. There were six databases with essentially the same data in each one. With so many points of entry, consistent reliable data was almost impossible. In this project, one database is being created that any of the departments can add or modify the data and those changes will be shared. This project is built on the "enter once use many concept".

65% Complete
On Budget
On Time

Computer Replacement: Replace 20 percent of the desktop and notebook computers, excluding DHR agencies, to maintain compatibility with other agencies and software standards.

100% Complete
On Budget
On Time

Setting Strategic Initiatives

A planning session was conducted with the IT Governance Committee on March 15, 2007. This session was followed up by sending the same questions and notes from the meeting to department heads for their input. During the session, the committee was asked to respond to the following set of questions:

1) In your opinion what projects undertaken by Catawba County Government have been successful?
2) What operational problems or inefficiencies are faced by Catawba County Government?"
3) What citizen related issues are faced or will be faced by Catawba County Government? What future direction of society requires change by Catawba County Government
4) What should be addressed in the long range goals for Catawba County Government?

For each question, follow-up questions were asked about the current role of technology, how it relates to the enterprise and how technology may help in the future.

Listed on the following pages is a summary of the responses to the questions.

In your opinion what projects undertaken by Catawba County Government have been successful?

The following were highlighted.

1. In house revaluation
2. PeopleSoft online time sheets
3. PeopleSoft Human Resources component (online benefits)
4. PeopleSoft Financials
5. Geospatial Information Systems
6. Generator for Justice Center
7. Online Building Permits
8. Web Development (E-newsletter)
9. IT Training
10. Hiring of CIO
11. Meals on Wheels
12. KIN Fund
13. Co-generation plant landfill methane reclaimed
14. Property tax online
15. Network PC's vs. Mainframe
16. E-Auctions
17. Jail Expansion
18. Flu Drive Through
19. School Nurse
20. E-procurement
21. Badge System
22. One stop permitting
23. Web based library services
24. Family-Net
25. Hazardous waste disposal

After discussion these follow-up questions were presented. "What made these projects successful? Was Technology Involved? Was it an Enterprise solution?"

The general theme of the discussion was that these successful projects all benefitted from teamwork, collaboration, planning and forward thinking. Technology was involved in nearly all of these projects in one form or another. Most of these successes were enterprise solutions, in that there was a net benefit for the entire organization.

What operational problems or inefficiencies are faced by Catawba County Government?

The following opportunities were discussed.

  1. Communication disconnect
  2. Lock of mobile workplaces
  3. Revenue shortfall vs. services needed
  4. Emergency communication system
  5. HR Hire, background, etc.
  6. Public Opinion
  7. Duplicate data
  8. Lack of oversight on TCO
  9. Lack of Enterprise focus
  10. Wireless and remote access
  11. Interoperability between departments
  12. Budget 18 months before use
  13. Duplication of services
  14. Manual work process vs. automation
  15. Short sighted (savings vs. long term)
  16. Geopolitical Operations
  17. New ways to market
  18. Wireless access
  19. Contract approval process
  20. Performance evaluation process
  21. Warrant process
  22. Budget and finance systems to each other
  23. DV process
  24. Public records (limited by old state laws)

The following questions were asked. Why do these inefficiencies exist? What can technology do to help?

The discussion focused on the need for better interdepartmental and citizen communication. Some inefficient processes have been automated due to lack of innovativeness or willingness to change. There is a need for an enterprise data solution, less redundant work flows and improved data processes. Automating some processes would create more efficient workflows. Technology could be used to streamline processes and increase productivity.

What citizen related issues are faced or will be faced by Catawba County Government?

The discussion yielded the following answers.

1. Ways to reach people (paper vs. online)
2. Population growth (maintain safety in communities, deal with diversity, less revenue, school demands, and health care)
3. Legislation (mandated and unfunded)
4. Education (safety, health, and economic growth)
5. Online payments (E-Pay)
6. Voting results and ability to E-Vote
7. Wireless access
8. Access to information (24/7)
9. Tax Rate
10. Content review on Web site
11. Jurisdiction (political lines)
12. Broadband to home
13. Changing demographics
14. Electronic payment
15. Changing population (cultures, educational levels)
16. Remote sites for county services
17. Flexible service hours
18. Diversity of expectations (older populations, baby boomers)
19. Aging population
20. Economy
21. Increasing taxes vs. services

Again the question was asked. Why are these items an issue? What can technology do to help?

As the community and workforce become more mobile, Catawba County Government will be called upon to provide more timely, updated and readily accessible information, interaction and availability. Citizens will demand a greater array of services while keeping the tax rate low. Technology can help by being poised to deliver these services by using enterprise solutions to reduce cost, overhead and time. Using standardized tools and data when appropriate and viable is also necessary.

What should be addressed in the long range technology goals for Catawba County Government?

1.   Web and online development, market services efficiently
2.   GIS, strengthen as technology changes
3.   Partner with providers, municipalities (provide internet access to citizen associated with online education)
4.   Universal translator
5.   Uniform method for online payment
6.   Method for eliminating duplication of effort
7.   More efficient methods for delivering services through automation and extension of online services
8.   Utilize technology to improve out public information efforts
9.   Build efficient internal process to optimize operational procedures
10. Maximize data/information sharing while minimizing redundant data entry
11. Increase a mobilized community(society)
12. Ensure secure, accurate, timely data information.
13. Encourage enterprise solutions while providing for unique business needs per dept.
14. Data Warehousing
15. Web Enabled Applications
16. Wireless community Infrastructure
17. Standard IT development tools

Could technology play a role in this change? How?

By putting in place a long term strategic plan that supports the goals of the County Commissioners and aligns with the anticipated needs of the citizens, technology can play a pivotal role.   Building the infrastructure and putting best practices forward now will prepare Catawba County Government for this eventuality.

Strategic Initiatives

Strategic Initiative 1

Empower the Public: Enable the public to interact with local government by providing secure access to information and the ability to efficiently conduct appropriate business 365/24/7.

Initiative 1.1

Create web based systems that provides secure, accurate and timely information to the public: Information in government systems is crucial to the operations of many businesses in Catawba County. Much of this information represents the public. Users have a right to timely and accurate information and the public has a right to know that their information is secure.

Initiative 1.2

Initiate an enterprise wide solution to online payments: Online/electronic payments are quickly becoming the norm in money transactions replacing cash and check systems. While online payments offer significant challenges for local government, they must offer these services to meet the expectations of the public. To provide consistent service and maximize return, one system, an enterprise solution should be implemented.

Initiative 1.3

Provide multiple, media rich methods to the public for accessing and receiving information: Traditionally local government has relied on press coverage, radio and TV coverage, event attendance, and web pages to communicate with the public. While these methods have been effective and must be maintained, new communication avenues are available that relate better to the public embedded in the technical world. Catawba County should expand the current RSS(Really Simple Syndication) and subscription offerings, as well as, adding podcasts.

Initiative 1.4

Provide web enabled applications for the public to use: People looking for information on Catawba County's web page want more than to be able to generate canned reports, they want to ask questions and have the system respond appropriately. As applications are created or upgraded, Catawba County should provide as many web enabled applications as possible. This will allow the public to access the data and look at it in the format that he/she wishes.

Strategic Initiative 2

Improve outcomes, efficiency, responsiveness, and agility of services by transforming the management of information technology through best practices and shared resources.

Initiative 2.1

Implement Enterprise Architecture across the County: The County should move from "silo" applications and processes to enterprise applications and processes. Enterprise architecture is the practice of applying comprehensive and consistent methods across the entire County so that business processes align with the organization's core goals and strategic direction. Catawba County has made significant strides to standardize on a common platform and that work should be encouraged and extended into other areas.

Initiative 2.1a

Maximize the County's investment in Peoplesoft by using it as the preferred development and delivery platform: PeopleSoft is a powerful platform. Currently the County uses it for HR and Finance. All County employees have access to at least the payroll functions. The platform must be maintained for these applications so it is a good candidate for expansion as an enterprise solution.

Initiative 2.1b

Maximize the County's investment in VoIP by ensuring that future systems integrate with the system: VoIP offers many features and opportunities. As the County upgrades other systems such as radio communications, the upgrades must be reviewed as one consistent system with built in interoperability and not as disparate systems.

Initiative 2.1c

Maximize the County's investment in virtual technology: Virtual technology allows for server consolidation and better management of server and storage resources. It is also a crucial part of an effective disaster recovery plan. Catawba County has made a significant investment in virtual technology and disaster recovery tools. The County should continue to enhance and expand this technology while at the same time eliminating the more costly individual server technology.

Initiative 2.1d

Institute Life Cycle Management(LCM) methodology across the County: Life Cycle Management methodology provides procedures for application development or vendor provided software from the concept phase until the end of the useful life of the product. It applies one consistent set of rules across the enterprise for decision making at all critical points. Using LCM, projects are better defined and all parties involved know what is expected at all times. This helps reduce risk to the project and ensures that the project delivers according to the specifications.

Initiative 2.1e

Continue to apply application, equipment and replacement standards across the County: Catawba County Government has equipment standards in place for all hardware purchases as well as a desktop replacement standard of every 5 years. Standards are also in place for desktop configurations and productivity software.

Initiative 2.1f

Capture once, use many: The County should move to a standardized data environment where data is collected once and utilized many times. This "capture once, use many" concept reduces duplication, inconsistencies and errors.

Initiative 2.2

Formalize an IT Governance Structure: IT Governance is becoming an increasingly important topic in the public sector. The role of the IT Governance is to ensure that IT is aligned with the business and delivers value, its performance is measured, its resources properly allocated and its risks mitigated. The IT Governance structure should be composed of department heads and senior leadership in order to assist the IT Department with project prioritization, goal alignment, and risk management.

Initiative 2.3

Use Project Management Methodology on all projects to maximize the success rate: Project Management Methodology provides proven methods for defining projects, resourcing projects and managing the risks associated with those projects. Using this methodology, projects have a better chance of success from the beginning and a better chance of achieving the desired outcomes in the end.

Strategic Initiative 3

Transform key business processes through the effective use of innovative technology and state-of-the-art software.

Initiative 3.1

Enable an increasing mobile workforce: Many duties performed by County employees require them to be away from an office environment. Keeping them in the field more hours reduces cost and provides better service for the public. The County has expanded the number of remote workers and has provided them with the tools necessary to do their job. Remote workers are defined to be those that maintain an office environment at some location other than a government facility. Mobile workers are defined as those who perform their duties in the field on a regular basis. The County should continue to support this mobile workforce.

Initiative 3.2

Continue to invest in SAN /Disaster Recovery technology to meet growing storage needs: As governments continue to collect data and information at an exponential rate, and subsequently store that data within the information systems, computing resources become strained. Catawba County has invested in a Storage Area Network (SAN) in order to house the data off the main technology resources, thereby extending their usefulness and reducing future expansion costs. The County should build on this platform in the future.

Initiative 3.3

Implement Web Enabled Applications where feasible: Web enabled applications are hosted on a server connected through internet. This means that they can be accessed from any location with a web browser and internet connection. This allows more people to share the data located on centralized server. Since the application is hosted on a web server, security, application upgrades and maintenance are controlled and operating cost are lowered

Initiative 3.4

Build a seamless interface for public safety across the County and municipalities: When dealing with an emergency situation, seconds could mean life or death. It is imperative that responding agencies have access to information and be able to communicate with each other. The County should encourage that all purchases by each of the entities be made in conjunction with this initiative.

Initiative 3.5

Leverage advanced GIS technology to enhance existing systems and integrate geospatial capabilities as a fundamental component of business systems where appropriate: The County has always been viewed as a leader in geospatial technology. Over the years it has made significant investments in these technologies.   The payoff for these investments is a very powerful database of GIS data. Today, many applications in all areas of government have a GIS component. Catawba County should leverage it's investment in GIS and integrate it where ever it would provide better information for the public and for our workforce.

Strategic Initiative 4

Leverage innovative partnerships to offer better services

Initiative 4.1

Encourage technology initiatives that provide better services and opportunities for the public. Technology is now infused into every area of people's lives. It is important that the public is afforded the opportunities that come with that technology and that it is used responsibly. The County should encourage private and public/private initiatives that expand opportunities for the public.

Initiative 4.1a

Encourage broadband services to all homes: While Catawba County is viewed as a very progressive county, there are still many areas where our citizens do not have inexpensive access to broadband services. The County should work with private entities to ensure that services are provided.

Initiative 4.1b

Partner with local service groups to recycle computers and other technologies: Every year computers and other technologies are replaced because they do not have the resources to support current day to day operations. This technology could be recycled back to the community through partnerships with local service groups. These groups, working in conjunction the schools, Habitat for Humanity, Social Services, and other agencies, could place some of the technology into the community where it would benefit our citizens.

Initiative 4.2

Partner with the school systems, municipalities and other agencies to offer services that are common to all: Local government agencies and the school systems have many common technology needs. Working together, will ensure that infrastructure, operating systems and applications will be interoperable and scalable. Purchases of hardware and software can take advantage of quantities of scale while affording smaller agencies the same opportunities as larger agencies.

Strategic Initiative 5

Empower the Workforces: Enable personnel by increasing the efficiency and agility of the systems they depend on.

Initiative 5.1

Provide training opportunities for end users that go beyond the basics and empower users to be self sufficient: Approximately sixty percent of the variance in technology project's success or failure can be attributed to the training available to end users. However, governments often view training dollars as expendable resources, not recognizing the connection between training and project success and return on investment. In order to increase technology adoption and to facilitate successful technology solutions for the departments, investments in end user training are critical. Investments should be made in a variety of technology areas, including the basic Microsoft Office suite, enterprise packages, and department-specific packages. All new technology deployments should include a detailed training plan that addresses the variety of learning styles within the County. Training is critical and should be adequately funded using best-of-breed training approaches.

Initiative 5.2

Ensure a well trained Technology staff: The County has made significant investments in training its IT professionals. However, that investment must be continued in order to maintain and update staff skill sets. In addition, with the rapid change of technology and the increasing complexity associated with information technology policies, procedures, and practices, it is critical that staff continue to engage in technical and managerial professional education opportunities.

Initiative 5.3

Transition the Mobile Workforce: Being able to function and perform expected duties in a mobile environment can prove challenging to personnel. The training

and the infrastructure for remote workers must be viewed differently than that provided to traditional workers. Mobile workers must be trained in not only how to run the software, but trouble shooting the computer, security issues related to being mobile, and how to connect to the services they need.

Initiative 5.4

Expand online employee services and recruitment: Catawba County offers many online services to its employees. These include online time sheets, paychecks, benefits summary, pay history, and more. Online recruitment now allows potential candidates to apply online. The County should expand these services to include online benefit enrollment and increase business process flow.

Strategic Initiative 6

Improve public safety by leveraging modern information systems and technology.

Initiative 6.1

Make security and confidentiality overriding priorities in all systems. The County maintains extensive data bases and records in its day to day operations. While much of this information is public record, personal data also resides here that is not public. Basic identity theft has made it more important than ever that proper security and confidentiality be maintained with these records. The County must constantly monitor its equipment, its applications, and its interfaces to ensure the digital safety of the information that the public has entrusted us with.

Initiative 6.2

Build a reliable communication network that provides for interoperability across the County. The County has a reliable radio network in place but it is limited by several factors, 1) it is a voter receive system that leaves some areas without communication depending on which tower signals originate from, 2) Hickory has an 800 Mhz system which does not allow for communications between Hickory PD and other emergency services, and 3) there is no data capability in the current system. Each of these areas diminish the level of service that can be provided by Public Safety and need to be addressed.

Initiative 6.3

Provide multiple options for the public to secure services: The current technology was built for voice and fixed phone lines. The Communications Center has been updated to locate wireless customers but it is still limited given the many ways people can communicate today. New technology allows users to connect through the traditional phone methods and extends capability to text

messaging, instant messaging, audio and video files. The technology allows data files to be received from any outside source with access to the Internet and facilitates the movement of that data to the appropriate source. All areas could benefit by embracing the new technologies.

Initiative 6.4

Build in redundancy to the network infrastructure: Today's operations are highly dependent on technology and the underlying infrastructure. Many of these systems interact with another to provide information and dispatch resources. It is critical that all single points of failure be eliminated from the infrastructure and that redundancy be built into the network.

Conclusion

The Catawba County Technology Strategic Plan provides a framework for the effective management of technology. It offers a customer focused approach to implementing and managing technology from both an internal and external perspective. Internally it focuses on collaboration, shared input and providing the right tools for our employees. Externally it focuses on providing services that are expected by the public in today's world.

That world has seen an incredible amount of change in technology and the ways people live and interact with it in the past few years. Catawba County has always been viewed as a progressive county that strives to use the latest technology to enhance the services provided to the public. The vision and efforts of County leadership should be commended since many of the past investments now provide a strong platform to move forward with the initiatives in this strategic plan.

The plan is dynamic in that it provides guidance in making technology decisions but like a map, allows the County to choose the best options to reach its goals. All technology decisions should be made from a strategic view point based on the initiatives set forth in this document. This ensures that all decisions can be made in an environment of flexibility but that the end result achieves the goals and expectations set by the County.

As the County moves into another exciting period of changing expectations, of growth, and of opportunities, it is critical that technology serve as a tool for improving efficiency and effectiveness, as well as, contributing to the safety and welfare of the public. Technology will allow the County to respond quickly to the demands of the increasing growth and needs that come with it. The future of Catawba County is encouraging and the administration and staff recognition of the value of technology only serves to enhance the potential of the County and reinforce its role as a leader among North Carolina local governments.

Correlation of the Strategic Plan to the 2007-2008 Technology Budget

The Catawba County Technology Strategic Plan sets forth a broad range of initiatives to bring about change. These initiatives, along with the guiding principles, IT governance and best practices provide a clear roadmap for moving into the future. But having a map is only the beginning of the process. Initiatives must be turned into actions to have any impact. While some of the initiatives can be partially accomplished without funding, most require either additional funding or a revaluation of current funding. The initiatives in this plan are expected to take at least five years to complete. Each year, the Technology budget should reflect these initiatives. Below is the correlation of the strategic plan to the 2007-2008 budget request outcomes.

INFORMATION TECHNOLOGY CENTER (ITC)

Statement of Purpose

To provide the technology to enhance the delivery of county government services and increase the access to and quality of vital government data which facilitates commerce and enhances quality of life in our community. This will be accomplished in a spirit of customer service, partnership, and consultation with our stakeholders. Our guiding principles are quality, integration and cost effectiveness.

Outcomes

1. Enhance workforce efficiency by providing a common toolset across the enterprise for all Catawba County employees. **(Strategic Initiative 2)**

    a. Deploy Microsoft Office 2007 on all computers where compatibility is not an issue in order to ensure county employees maintain the ability to communicate with outside agencies. The current version of Office uses a different file format from the older versions we currently use. Hardware compatibility, software configurations will be checked and classes designed for county employees. **(Strategic Initiative 2.1)**
    b. Deploy a common phone system across the County with a standard feature set that is available to all departments as well as provide training and support for the new telephone system. A Cisco VoIP system will be installed by November 2007. **(Strategic Initiative 2.1b)**
    c. Provide computer equipment to County employees that is reliable and has enough resources to run current software standards by replacing 20% of desktop and notebook computers, excluding

Department of Human Resources (DHR) agencies. To be completed June 30, 2008. **(Strategic Initiative 5)**

2.   Ensure that Catawba County Government has secure, reliable, and redundant infrastructure to meets the needs of the citizens and the workforce. **(Strategic Initiative 6)**

   a.   Deploy a SAN and Virtual Server solution to ensure the protection and recovery of Catawba County information systems. This project will prioritize systems, inventory applications, document processes, list assets, identify problems, and provide an organized recovery process to bring critical services back online quickly. Completed by Dec 2008. **(Strategic Initiative 3.2, Strategic Initiative 6.4)**
   b.   Replace core switches to provide increased speed and quality of service. September 2007. **(Strategic Initiative 6.4, Strategic Initiative 2.1b)**
   c.   Provide wireless Internet and Intranet access in County offices for the public and employees. This will allow for users to be mobile within the County and more efficient by having applications and information available where they need it instead of just at their desks. It will provide additional services for the public at the libraries as they now have a limited number of public access computers. ITC will install wireless capabilities in specified areas such as the Government Center, Newton Public Library, Emergency Operations Center (EOC), and the Register of Deeds office. Completed by June 2008. **(Strategic Initiative 1, Strategic Initiative 3.1)**

3.   Enhance department services and efficiency by providing and supporting applications specific to the needs of the department while maintaining an enterprise perspective. **(Strategic Initiative 2)**

   a.   Work with departments to analyze business processes and where feasible, work to improve these processes through the use of technology. **(Strategic Initiative 2, Strategic Initiative 2.1d)**
   b.   Maximize the investment in Peoplesoft where feasible. **(Strategic Initiative 2.1a)**
   c.   Develop or purchase, install, train, and support databases and applications including email, word processing, financial, database, presentation, and specialized applications. **(Strategic Initiative 2.1d, Strategic Initiative 2.1e)**

4.   Provide timely, accurate information and services to citizens, employees, and stakeholders in a variety of methods via the County's Internet and Intranet services. **(Strategic Initiative 1)**

    a.   Maintain a strategic direction of moving appropriate information to the County's website. **(Strategic Initiative 1.1)**

    b.   Explore and implement services that allow citizens to conduct business anytime and anyplace with the County via the Internet. **(Strategic Initiative 1, Strategic Initiative 1.2)**

    c.   Continually review and add new features to the County's website. **(Strategic Initiative 1.1)**

    d.   Expand Really Simple Syndication (RSS) and subscription services offered on the website. **(Strategic Initiative 1.3)**

5.   Provide better services to our citizens with critical care and other special needs in times of emergency. **(Strategic Initiative 6)**

    a.   Develop a consolidated data repository for storing information and disseminating it to emergency management agencies. **(Strategic Initiative 2.1d)**

    b.   Allow citizens with critical care or special needs to register with County agencies to assure proper care is received in emergency situations. **(Strategic Initiative 6.3)**

    c.   Develop a data flow process between the critical care/special needs database and the Citizens Alert Notification System, Geospatial Information Services (GIS), and Emergency Services. **(Strategic Initiative 2.1d)**

GEOSPATIAL INFORMATION SERVICES (GIS)

Statement of Purpose

The Geospatial Information Services (GIS) provides tools to the user community to enhance and improve the quality of geospatially related services including but not limited to planning, building inspections, environmental health, emergency services, economic development, infrastructure, management, facilities' management, and parcel mapping. The GIS will promote good government as a multi-jurisdictional project involving the integration of resources from the County and the participating municipalities.

Outcomes

1.   Provide reliable, valid, and useful geospatial information to our citizens. **(Strategic Initiative 3.5)**

    a.   Provide information via the GIS website. **(Strategic Initiative 1.1, Strategic Initiative 1.4)**

    b.   Maintain current baseline layers. **(Strategic Initiative 3.5)**

    c.   Add additional layers of geospatial data that are vital to the mission of Catawba County Government to the GIS database. **(Strategic Initiative 3.5)**

    d.   Support County departments with GIS data, analysis, and maps. **(Strategic Initiative 3.5)**

    e.   Upgrade and maintain GIS related hardware, software, and data. **(Strategic Initiative 3.5)**

2.   Provide a timely response to citizens and departments **(Strategic Initiative 3.5)**

    a.   Respond to and complete 95% of map and data requests from the public within 24 hours of receiving the request. **(Strategic Initiative 3.5)**

    b.   Complete requests from departments within an agreed project timeline. **(Strategic Initiative 3.5)**

3.   Strengthen relationships with other GIS agencies and sources. **(Strategic Initiative 4.2)**

    a.   Partner with the municipalities through the GIS Consortium fostering cost sharing and savings on joint projects and ensuring continuity of data for our citizens. **(Strategic Initiative 4.2)**

    b.   Work with State and local agencies data layers and processes. **(Strategic Initiative 4.2)**

4.   Improve the speed and efficiency of the GIS Database. **(Strategic Initiative 3.5)**

    a.   Transfer data and applications to ArcSDE. **(Strategic Initiative 3.5)**

    b.   Move Tax Editing Application to the SDE environment. **(Strategic Initiative 3.5)**

E-911 COMMUNICATIONS CENTER

Statement of Purpose

The Catawba County E-911 Communications Center provides emergency and administrative communications for the citizens of Catawba County by placing them in touch with public safety and related government service agencies. To be prepared for daily

communications traffic and emergencies requiring adequate numbers of trained personnel. To have the most current state-of-the-arts computerization, along with radio and telephone technology to assure that saving lives and property can always be attained.

Outcomes

1. To ensure citizens receive prompt emergency and medical care, the Communications Center will maintain a 90 second dispatch time average on all emergency calls throughout the County. Responding units will have the following response time averages: **(Strategic Initiative 6, Strategic Initiative 6.2, Strategic Initiative 6.4)**
   a. EMS – 8 minute average response time, which is a 9 ½ minute average total response time. **(Strategic Initiative 6, Strategic Initiative 6.2, Strategic Initiative 6.4)**
   b. Rescue – 6 minute average response time, which is a 7 ½ minute average total response. **(Strategic Initiative 6, Strategic Initiative 6.2, Strategic Initiative 6.4)**
   c. Fire – strive to meet a 6 minute average response time, which is a 7 ½ minute average total response. **(Strategic Initiative 6, Strategic Initiative 6.2, Strategic Initiative 6.4)**

2. The Communications Center will provide quality customer service to all public safety agencies by responding to field units within 15 seconds of each unit's call. Accomplishment evidenced by maintaining an overall satisfaction rating of 90% of better from all public safety agencies. **(Strategic Initiative 6, Strategic Initiative 6.2, Strategic Initiative 6.4)**

3. Improve citizen and community awareness of the 911 process. **(Strategic Initiative 1.3)**
   a. Educate local businesses on the information needed by the E-911 Telecommunicator to dispatch the appropriate public safety agencies to the correct locations when 911 is called by conducting on-site training and informational sessions with work groups. Post-event customer service surveys will be given to participants to determine if attendants found the training useful and retained the desired information. **(Strategic Initiative 1.3)**
   b. Develop 911 information for dissemination to the public. **(Strategic Initiative 1.3)**
   c. Work with the three school systems to develop awareness of the 911 process in our youth. **(Strategic Initiative 1.3)**
   d. Translate 911 information materials into Spanish and Hmong. **(Strategic Initiative 1.3)**

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